

FIG. 3B. If so, at Block 340, independent authentication may be obtained from the user 160' by, for example, asking the user 160' to show a picture identification or to provide and/or participate in some other independent authentication prior to approving the transaction. It will be understood that the user 160' may be authorized even though the single wireless terminal 150' is not proximate to the user 160' because the user's spouse or child may be using the single wireless terminal 150' at the time of the prospective credit card transaction, or the user 160' may have accidentally left the single wireless terminal 150' at another location, such as at home. Nonetheless, due to the heightened possibility of fraud, additional authentication may be obtained at Block 340.

[0048] Returning again to Block 310, if the wireless network interface 114 determines that multiple wireless terminals, such as wireless terminals 150' and 150", are associated with the user 160' of the credit card 162' for the prospective credit card transaction at the credit card transaction terminal 130', then a test is made at Block 350 as to whether all of the multiple wireless terminals that are associated with the user 160' are sufficiently close to the credit card transaction terminal 130', for example located within the distance 300. If this is the case, then the transaction may be authorized at Block 330. Thus, in some embodiments of the invention, a given user 160' may carry two cell phones, a cell phone and a personal digital assistant, a cell phone and a pager, etc. If they are all close to the transaction terminal 130', it is highly likely that they are all being carried by the user 160' and additional authentication may not be needed.

[0049] Returning again to Block 350, if all of the wireless terminals 150', 150" are not located near the transaction terminal 130', a test is made at Block 370 as to whether different wireless network providers 140 provide the different wireless terminals 150', 150". For example, an inquiry may be made as to whether the first wireless terminal 150' and the second wireless terminal 150" are provided by different wireless network providers 140. If this is the case, then at Block 390, additional authentication may be required of the user, whereas, at Block 380, if the same network provider 140 provides the different terminals 150', 150", a lower level of authentication may be obtained from the user at Block 380.

[0050] Embodiments of Blocks 370, 380 and 390 may arise from recognition that a thief may attempt to spoof location based credit card authorization by registering an additional wireless terminal in the user's name, so that the additional wireless terminal is proximate the fraudulently obtained credit when a thief attempts to use the fraudulently obtained credit card. However, in these circumstances, it may be difficult for the thief to obtain a new terminal from the same wireless network provider as the legitimate user's wireless terminal. For instance, for reasons of marketing/security/billing, the same wireless provider may question and/or investigate multiple registration attempts and/or even contact the legitimate user. Thus, the thief may try to obtain a second wireless terminal from a different wireless network provider. Accordingly, a heightened level of authentication may be required at Block 390 when different wireless network providers provide the multiple wireless terminals 150', 150", compared to when all of the wireless terminals were obtained from the same wireless network provider. It will also be understood that there may be circumstances where the different wireless network terminals may have been obtained from different wireless network providers by a legitimate user. For example, a user may have a home cell phone from one wire-

less network provider and a business cell phone from another wireless network provider. Nonetheless, to reduce the likelihood of fraud, additional authentication may be obtained at Block 390 when different wireless network providers are present at Block 370.

[0051] Embodiments of FIGS. 3A and 3B have referred to one or more wireless terminals 150', 150" that are associated with a user 160' of a credit card 162' for the prospective credit card transaction being "sufficiently close" or "near" the credit card transaction terminal 130'. The definition of "sufficiently close" or "near" may always be the same or may vary depending upon the application. For example, it may be required that the wireless terminal 150' is within 10 feet, or a minimum resolution distance of the location determining system, of the credit card transaction terminal 130', to ensure that the wireless terminal 150' is actually carried on the person of the user 160'. However, this distance 300 may be relaxed by a given credit card issuer and/or merchant. For example, in retail stores where a checkout line is used, the user 160' of the credit card 162' is generally very close to the credit card transaction terminal 130'. However, in a department store or other store that does not use checkout lines, the credit card transaction terminal 130' may be located a considerable distance away from the user, so that the distance 300 therebetween may be set to be larger, for example, up to about 30 feet. In other retail environments, the user 160' may actually browse the store while the transaction is being authorized, so that even greater distances 300 may be permitted. In still other embodiments, the acceptable distance 300 may be based on the type of wireless terminal 150'. For example, a laptop computer may be kept in a briefcase, and may be allowed a wider latitude than a cell phone or pager which is typically carried by the user. Moreover, the distance 300 may vary based on the time of day, the occurrence of certain sales or promotions, the history of use, types/models of wireless terminal, types/models of merchant terminal, ambient wireless interference conditions, error conditions and/or thresholds, the number of wireless devices registered to the user and/or other criteria, or may be fixed.

[0052] Moreover, the authentication levels that are described in Blocks 340, 380 and 390 may vary based on the identity of the merchant, the amount of the credit card purchase, the history of the user or the merchant and/or other known parameters. The authentication level obtained in Blocks 340 and 380 may be same or may be different. The additional authentication that is obtained in Block 390 is a higher level of authentication than Block 380. Various levels of authentication for credit card transactions are well known to those having skill in the art and may include providing an independent picture identification, providing one or more password/pass code/PIN (Personal Identification Number), providing secret information or answers to questions known only to the user over a phone line or other communication medium, an extended conversation with the representative of the credit card issuer and/or the merchant, and many other levels of authentication well known to those having skill in the art. Additional discussion of authentication levels will be provided below.

[0053] FIG. 4 is a flowchart of operations that may be performed to correlate the locations of the credit card transaction terminal 130 that is associated with the prospective credit card transaction and one or more user wireless terminals 150 that are associated with the user 160 of the credit card 162, according to various embodiments of the present inven-